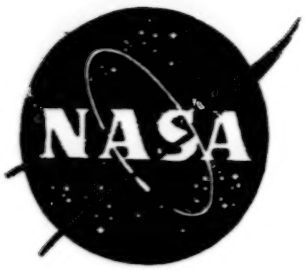
NAS 1.53/3:95-OSS-12/APP.



National Aeronautics
and Space Administration

MAY 2, 1995
NRA 95-OSS-12

RESEARCH ANNOUNCEMENT

PLANETARY INSTRUMENT DEFINITION AND DEVELOPMENT PROGRAM

APPENDICES

PROPOSALS DUE: AUGUST 2, 1995

COMPLETED

95-033368

Appendix A
to NRA 95-OSS-12

Planetary Instrument Definition and Development Program

I. PROGRAM SCOPE

The Planetary Instrument Definition and Development Program (PIDDP) supports the advancement of spacecraft-based instrument technology which shows promise for use in scientific investigations on future planetary missions. The goal of the program is not to develop flight-qualified hardware, but rather to define and develop scientific instruments or components of such instruments to the point where the instruments can be proposed in response to future announcements of flight opportunity without additional extensive technology development. The proposed instrument technology must address specific scientific objectives of candidate future missions. New measurement concepts can be proposed, as well as methods to significantly improve the performance of existing instruments and the development of technologies to enable integrated instrument packaging (architectures). The emphasis in this NRA is on the development of miniaturized, low power, and low cost instruments for Discovery-class and other similar missions. Instrument definition and development studies can take place at several stages, from feasibility studies, to conceptual design, to laboratory breadboarding, but not brassboarding, of critical components and complete instruments.

Proposals to develop laboratory instruments, ground-based or airborne telescopes, or auxiliary instrumentation for telescopes such as spectrometers, or to conduct exploration systems studies, or onboard data processing, or data compression studies are not appropriate.

The nature of specific efforts to be supported will be variable, with emphasis at any one time placed on preparation for the nearest term missions. However, there can also be support for important, long lead-time definition studies, for the exploration of innovative approaches that may provide entirely new classes of instruments, for the development of new enabling technology for missions further in the future, and for detector development studies which may advance the technology for a range of planetary instrumentation applications. Proposers are encouraged, however, to relate their development efforts as closely as possible to specific future planetary missions and demonstrate how their technology will address scientific questions and goals of these missions.

II. FUTURE MISSION PLANS

The Solar System Exploration Division (SSED) supports research in planetary materials and geochemistry, planetary geology and geophysics, planetary atmospheres and astronomy, origins of solar systems, and exobiology, and anticipates the following principal areas of flight opportunities for the next decade:

- The Discovery Program of small planetary missions. The first two Discovery missions, Mars Pathfinder and Near Earth Asteroid Rendezvous (NEAR) are in development. A mission to the Moon, Lunar Prospector, has been selected for development and three candidate missions, Stardust (comet sample return), Venus Multiprobe Mission (atmospheric circulation), and Suess-Urey (solar wind sample return), have been chosen for Phase A study.

- Mars Surveyor missions, including orbiters and landers utilizing small to medium spacecraft. The first of these is the Mars Global Surveyor.
- Participation in the European Space Agency (ESA) ROSETTA mission to a comet.
- A flyby mission of the Pluto-Charon system called the Pluto Express.

Flight opportunities also under consideration for this decade include investigations on the International Space Station and missions to the outer solar system.

III. PIDDP FOCUSED MISSIONS

Proposals for instrument definition and development for certain of the following future missions will be considered for funding under this NRA. Note that instrument proposals for missions for which Announcements of Opportunity (AO) have been issued are not appropriate for PIDDP funding:

1. Discovery Program

The Discovery Program is envisaged as a series of small, focused, quick-turnaround missions. Development costs will not exceed $150 million (in fiscal year (FY) 1992 dollars), development time will be approximately 36 months, and launch vehicles will not be larger than a Delta-II.

The Discovery missions may include flyby, orbiter, lander, Earth orbiting, and sample return missions to a variety of solar system objects to study surface and atmospheric composition, thermal structure, meteorology, geoscience, topography, dynamics, and field and particle environments. Instrumentation and techniques addressing seminal scientific questions in this broad range are appropriate development efforts under this PIDDP NRA; technology applicable to multiple missions and investigations will have higher priority for funding.

Under this NRA, instrument definition and development will be considered only for post-NEAR, Mars Pathfinder, Lunar Prospector, and the three selected candidate Discovery missions. New instrument development proposals for missions already selected for development or Phase A study will not be accepted under this NRA.

2. Mars Surveyor Missions

Although the scientific objectives of each of these missions are greatly varied, the scientific payload for each mission will consist of small, lightweight, and low power consumption instruments.

The instrument complement for the first Mars Observer science recovery orbiter (called Mars Global Surveyor) has already been chosen for launch in November 1996. A follow-on orbiter and the next Mars lander mission after Mars Pathfinder are planned for launch in 1998. There will not be sufficient time for PIDDP activity to influence the instrument complements for these missions due to be selected in 1995. Therefore, this NRA will not support the development of instrumentation for these missions.

Instrument development proposals for both U. S. and international follow-on missions to Mars are appropriate under this NRA. It is expected that these missions will include additional Mars orbiters and landers which will be launched after 2000. Current studies are considering two U. S. landers and a European Mars network, InterMarsNet.

Some consideration will be given to proposals addressing the development of generic instrumentation for future Mars sample return missions. Since the definition and schedule of these missions is currently poorly defined, support of developments for such missions will be of lower priority.

3. ROSETTA

NASA plans to achieve some goals of cometary science for costs to NASA at or below the level of Discovery Program missions by cooperating with the European Space Agency (ESA) on the ROSETTA cometary mission.

The primary focus of ROSETTA is the comet's nucleus and its close environment. Since the AO's for this mission have already been issued, instrument proposals for ROSETTA will not be considered under PIDDP.

4. Interplanetary and Cometary Dust Particles

The potential now exists for participation in investigations on the International Space Station to measure the trajectory of individual interplanetary dust particles and to capture them for subsequent analysis in terrestrial laboratories. Proposals to develop techniques for capturing interplanetary dust particles and for trajectory sensors will be considered under this NRA.

Similarly, proposals to develop techniques and materials for collecting dust samples during the flyby of an active comet will be considered.

5. Pluto Express

The Pluto Express mission is a robotic reconnaissance of the Pluto-Charon system. In order to minimize cost and delivery time, a pair of very small spacecraft using lightweight advanced technology hardware components and science packages will be used, with possible international cooperation. The baseline mission, based on a 2000 new start authorization, calls for launch in 2002-3.

Since NASA anticipates releasing the instrument AO for this mission during 1995, no proposals for instrumentation development for this mission will be accepted under this NRA.

6. ASEPS (Astronomical Study of Extra-solar Planetary Systems)

An unchanged aspect of the SSED long-range strategy is the flight mission follow-on to the ground-based phase of the search for planets about other stars. A study and development of a "Roadmap" for such a future flight program, ASEPS 1, is currently being developed. A program strategy will not be available until the completion of this study and "Roadmap." Therefore, proposals for funding for ASEPS 1 instrument concepts will not be accepted under this NRA.

7. Outer Solar System Missions

Missions to planets in the outer solar system are being contemplated for early in the next century. Such missions might be of several different types:

- Focused science missions similar to Discovery missions.
- Missions developed around the use of the Pluto Express spacecraft.

These could include multiple missions to study Jupiter (e.g., Measure Jupiter) and probes (e.g., Saturn or Uranus Probe).

Some consideration will be given to proposals addressing the development of generic instrumentation for such outer solar system missions. Since the definition and schedule of these missions is currently poorly defined, support of developments for such missions will be of lower priority.

IV. PROPOSAL GUIDELINES AND EVALUATION CRITERIA

Proposals are solicited under this NRA for instrument definition and development for only the missions described in Section III.

It is anticipated that the scientific payloads on all future solar system exploration missions will be limited to small, low mass, low power consumption, and low cost instruments. For this reason, only proposals for instrument definition or development satisfying these general specifications will be considered for support.

In addition, all proposals submitted must specify:

- The mission or class of missions for which the proposed instrument is applicable. Instruments which might fly on a number of missions will be given priority over those applicable to only a single mission.

- The science objectives of the proposed instrument. The relationship between the science objectives and the instrumental capabilities must be clearly demonstrated. For those instruments applicable to many missions or capable of meeting multiple science objectives, examples of science objectives for the proposed mission or missions should be given.

- Technological advances to be pursued as an inherent element of achieving the science objectives. Proposers are also asked to identify potential mechanisms which could facilitate transfer of these technologies to other users, including the private sector, for possible application beyond the immediate one of meeting mission science objectives.

"EVALUATION FACTORS" described in Appendix B, Section 13, are superseded as follows:

The principal elements in evaluating a proposal are relevance to the SSED program, intrinsic merit, and cost.

The determination of a proposal's relevance is based on a combination of factors:

- The extent to which the proposed instrument is applicable to multiple missions in the SSED program.

- The extent to which the instrument addresses a priority science goal of the mission or missions for which it is a candidate for flight.

- Either the nearness of the mission or missions in question, or the necessity of embarking on a long lead-time development of a very important instrument contemplated for flight on a mission that is of high priority, but which is not in the near-term queue.

It should be noted that the contemplated sequence of missions described in this Announcement is a best current estimate and is subject to change. NASA reserves the right to make a determination of relevance based on the contemplated sequence of missions as it is understood at the time of proposal evaluation.

Evaluation of a proposal's intrinsic merit includes consideration of the following factors, where factors 1, 2, and 3 carry somewhat more weight than factors 4, 5, and 6.

1. Overall scientific or technical merit.

2. Uniqueness of the proposed instrument development in the sense that it:

   - Leads to significant reductions in instrument size, mass, power, and cost, and/or

   - Provides an entirely new approach that significantly enhances the state of the art, thereby enabling critical enhancements to scientific investigations.

3. Overall standing among similar proposals available for evaluation and/or evaluation against the known state of the art.

4. Potential for successful technology transfer to secondary applications, including commercial applications, in other areas.

5. Qualifications, capabilities, and experience of the proposal principal investigator.

6. Offeror's capabilities, related experience, facilities, techniques, or unique combinations of those which are integral factors for achieving the proposed objectives.

Evaluation of the cost of a proposed effort includes the relationship of the proposed cost to available funds, as well as the realism and reasonableness of the proposal cost.

V. PROGRAM MANAGEMENT INFORMATION

Full proposals are sought for either entirely new studies or for the extension of PIDDP studies terminating in FY 1995. Studies selected previously for multiple year periods of performance and that are continuing beyond FY 1995 require submission of brief renewal proposals consisting of a progress report and updated budget (excluding contracts), but do not require submission of a full proposal. Proposals may specify periods of performance of one, two, or three years. A final report is required at the termination of the period of performance.

It is expected that there will be approximately $2.5 million dollars available for new (and extension) proposals, and that about 15–20 studies will be supported with these funds. Funding for the investigations selected will begin in FY 1996.

VI. SUPPLEMENTARY PROPOSAL PREPARATION GUIDANCE

Abstract and Summary Pages:

The "Transmittal Letter or Prefatory Material" section of Appendix B is modified as follows:

The first three pages of the proposal after the transmittal letter should be the following prefatory material: a title page which includes the title, names, addresses, and telephone numbers of the proposer and principal participants, including subcontractors; an abstract page (one page or less) which summarizes the proposed activity; and a third page which summarizes the funding requested, by year, for the proposed period of performance. The funding information on the third page is intended as a convenient summary and not a replacement for the detailed budget.

Certification Forms:

The following completed and signed certification forms must be attached to the proposal:

1. Certification Regarding Debarment, Suspension, and Other Responsibility Matters.
2. Certification Regarding Drug-Free Workplace Requirements.
3. Certification Regarding Lobbying (required for proposals requesting a cumulative amount of funding of $100,000 or more).

Copies of these certification forms are provided at the end of Appendix B.

Proposal Length:

The "Length" section is revised as follows:

The maximum length of each proposal is limited to 15 nonreduced, single-spaced typewritten pages not including title page, abstract, budget summary, and appendices.

Proposal Costing Detail:

With regard to the cost detail desired, the guidelines outlined below should be followed. Sufficient proposal cost detail and supporting information will facilitate a speedy evaluation and award.

Dollar amounts proposed with no explanation (e.g., Equipment: $58,000, or Labor: $110,000) may cause delays in evaluation and grant award.

The proposal costing information should be sufficiently detailed to allow the Government to identify costed elements for evaluation purposes. Generally, the Government will evaluate costs as to reasonableness, allowability, and allocability. An example of a Proposal Cost Summary is shown on page A-7. The summary is only an example, but does display the desired detail. Each category should be explained. Offerors should exercise prudent judgment as the amount of detail necessary varies with the complexity of the proposal.

Examples:

Direct Labor

Labor costs should be segregated by titles or disciplines with estimated hours and rates for each. Estimates should include a basis of estimate such as currently paid rates or outstanding offers to prospective employees. This format allows the Government to assess cost reasonableness by various means including comparison to similar skills at other organizations. For example:

	Hours	Rate	Amount
Chief Investigator	1,296	$19.34	$25,045
Assistant Investigator	330	$11.78	$3,887
Clerical Support	125	$8.70	$1,088
Total	**1,750**		**$30,020**

Indirect Costs

Indirect costs should be explained to an extent that will allow the Government to understand the basis for the estimate. Examples of prior year historical rates, current variances from those rates, or an explanation of other basis of estimates should be included.

Where costs are based on allocation percentages or dollar rates, an explanation of rate and application base relationships should be given. For example (see the following page), the base to which the General and Administrative (G&A) rate is applied should be explained as: application base equals total costs before G&A less subcontracts.

Other Costs

Each significant cost category should be detailed, explained, and substantiated. For example:

Travel Costs

Trips	Destination	Duration	Air Fare	Per Diem	Total
1	Australia	6 days	$1,234	$550	$1,784
2	New Zealand	4 days	$1,456	$366	$3,664
					$5,428

Equipment Purchases

Units	Type	Cost	Total
4	Laser meas. dev.	$4,399	$17,596

Proposal Cost Summary

An example of the format for a proposal cost summary is given below:

	All Periods			First Year			Second Year[a]		
	Hours	Rate	Amount	Hours	Rate	Amount	Hours	Rate	Amount
Direct Labor[b]									
Investigator	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Investigator Asst	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Clerical Support	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Runner	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fringe Benefits		0.0%	0.000		0.0%	0.000		0.0%	0.000
Overhead		0.000	0.000		0.000	0.000		0.000	0.000
Other Direct Costs									
Subcontracts	0.000		0.000	0.000		0.000	0.000		0.000
Other[c]									
Total ODC			0.000			0.000			0.000
Subtotal			0.000			0.000			0.000
G&A[d]		0.0%	0.000		0.0%	0.000		0.0%	0.000
Total Cost	0.000		0.000	0.000		0.000	0.000		0.000
Fee		0.0%	0.000		0.0%	0.000		0.0%	0.000
Total Price			00.000			00.000			00.000
Hourly Cost[e]			00.000			00.000			00.000

a) Cost should be divided into yearly segments if applicable. Other years or periods should be listed to the right.
b) Example categories only. Zeros are used where entries would normally contain meaningful numbers.
c) The matrix is not limited to categories in this example and should consist of the detail of categories proposed.
d) The matrix should include an accompanying explanation of rate and base relationships.
e) Total productive hours divided into total cost and fee.

VII. GUIDELINES FOR FOREIGN PARTICIPATION

Proposals from foreign entities should not include a cost plan. Foreign proposals and U.S. proposals which include foreign participation must be endorsed by the respective government agency or funding/sponsoring institution in that country from which the foreign participant is proposing. Such endorsement should indicate that:

1. The proposal merits careful consideration by NASA.

2. If the proposal is selected, sufficient funds will be made available to undertake the activity as proposed.

The required Notice of Intent and proposal copies are to be submitted to the address given in the letter on pages 1–2 of this Announcement. An additional (1) copy of the proposal, along with the Letters of Endorsement, must be forwarded to the NASA International Relations Division. These documents should be sent to:

Ms. Shiron D. Gaines
Reference: NRA 95-OSS-12
Code IR
NASA Headquarters
Washington, DC 20546-0001
USA

All proposals must be typewritten in English. All foreign proposals will undergo the same evaluation and selection process as those originating in the U.S. Foreign proposals, and U.S. proposals which include foreign participation, must follow all other guidelines and requirements described in this NRA.

All proposals must be received before the established closing date; those received after the closing date will be treated in accordance with NASA's provisions for late proposals.

Successful and unsuccessful proposers will be contacted in writing by the NASA Program Office coordinating the NRA. Copies of these letters will be sent to the sponsoring government agency.

Should a foreign proposal or a U.S. proposal with foreign participation be selected, NASA's International Relations Division will arrange with the foreign sponsoring agency for the proposed participation on a no-exchange-of-funds basis, in which NASA and the foreign sponsoring agency will each bear the cost of discharging its respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

1. A letter of notification by NASA; and/or

2. An exchange of letters between NASA and the sponsoring governmental agency.

BLANK PAGE

NRA APPENDIX B

GUIDELINES FOR RESPONDING TO NASA RESEARCH ANNOUNCEMENTS (NRA) FOR SOLICITED BASIC RESEARCH PROPOSALS

AUGUST 1988

OFFICE OF PROCUREMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, DC 20546

INSTRUCTIONS FOR RESPONDING TO NASA RESEARCH ANNOUNCEMENTS FOR SOLICITED RESEARCH PROPOSALS

(AUGUST 1988)

1. FOREWORD

a. NASA depends upon industry, educational institutions and other nonprofit organizations for most of its research efforts. While a number of mechanisms have been developed over the years to inform the research community of those areas in which NASA has special research interests, these instructions apply only to "NASA Research Announcements," a form of "broad agency announcement" described in 6.102(d)(2) and 35.016 of the Federal Acquisition Regulation (FAR). The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while at the same time preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 18-70.203 of the NASA Federal Acquisition Regulation Supplement.

2. POLICY

a. NASA fosters and encourages the submission of research proposals relevant to agency mission requirements by solicitations, "NASA Research Announcements," which describe research areas of interest to NASA. Proposals received in response to an NRA will be used only for evaluation purposes.

b. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a pre-award synopsis published for individual proposals.

c. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

3. PURPOSE

These instructions are intended to supplement documents identified as "NASA Research Announcements." The NRAs contain programmatic information and certain "NRA-specific" requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

4. RELATIONSHIP TO AWARD

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded on the basis of a proposal submitted in response to an NRA. NASA does not have separate "grant proposal" and "contract proposal" categories, so all proposals may be prepared in a similar fashion. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Additional information peculiar to the contractual process (certifications, cost and pricing data, facilities information, etc.) will be requested, as necessary, as the procurement progresses. Contracts resulting from NRAs are subject to the Federal Acquisition Regulation and the NASA FAR Supplement

(NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NHB 5800.1).

5. CONFORMANCE TO GUIDANCE

a. NASA does not have any mandatory forms or formats for preparation of responses to NRAs; however, it is requested that proposals conform to the procedural and submission guidelines covered in these instructions. In particular, NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible, and be submitted on the proposers' most favorable terms.

b. In order to be considered responsive to the solicitation, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation. NASA reserves the right to reject any or all proposals received in response to an NRA when such action is considered in the best interest of the Government.

6. NRA-SPECIFIC ITEMS

a. Several proposal submission items will appear in the NRA itself. These include: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information.

b. Items included in these instructions may be supplemented by the NRA, as circumstances warrant. Examples are: technical points for special emphasis; additional evaluation factors; and proposal length.

7. PROPOSAL CONTENTS

a. The following general information is needed in all proposals in order to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material

1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;

2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;

5) Identification of any other organizations that are currently evaluating a proposal for the same efforts;

6) Identification of the specific NRA, by number and title, to which the proposal is responding;

7) Dollar amount requested of NASA, desired starting date, and duration of project;

8) Date of submission; and

9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. Restriction on Use and Disclosure of Proposal Information

It is NASA policy to use information contained in proposals for evaluation purposes only. While this policy does not require that the proposal bear a restrictive notice, offerors or quoters should, in order to maximize protection of trade secrets or other information that is commercial or financial and confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information (data) contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

NOTICE

Restriction on Use and Disclosure of Proposal Information

The information (data) contained in [insert page numbers or other identification] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

d. Abstract

Include a concise (200–300 word if not otherwise specified in the NRA) abstract describing the objective of the proposed effort and the method of approach.

e. Project Description

1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge in the field; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the general plan of work, including the broad design of experiments to be undertaken and an adequate description of experimental methods and procedures. The project description should be prepared in a manner that addresses the evaluation factors in these instructions and any additional specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Note, however, that subcontracting significant portions of a research project is discouraged.

2) When it is expected that the effort will require more than one year for completion, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should, of course, be on the first year of work, and the description should distinguish clearly between the first year's work and work planned fur subsequent years.

f. Management Approach

For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and any necessary arrangements for ensuring a coordinated effort should be described. Aspects of any required intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described in this section.

g. Personnel

The principal investigator is responsible for direct supervision of the work and participates in the conduct of the research regardless of whether or not compensation is received under the award. A short biographical sketch of the principal

investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

h. Facilities and Equipment

1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use on the project.

2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible alternative to purchase. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for both research and non-research purposes should be explained.

i. Proposed Costs

1) Proposals should contain cost and technical parts in one volume; do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used.)

3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 18-31 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

j. Security

Proposals should not contain security classified material. However, if the proposed research requires access to or may generate security classified information, the submitter will be required to comply with applicable Government security regulations.

k. Current Support

For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

l. Special Matters

1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and

administrative contracting officer, when applicable.

8. RENEWAL PROPOSALS

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. It is not necessary that a renewal proposal repeat all of the information that was in the original proposal upon which the current support was based. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which extended support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA reserves the right to renew an effort either through amendment of an existing contract or by a new award.

9. LENGTH

Unless otherwise specified in the NRA, every effort should be made to keep proposals as brief as possible, concentrating on substantive material essential for a complete understanding of the project. Experience shows that few proposals need exceed 15–20 pages. Any necessary detailed information, such as reprints, should be included as attachments rather than in the main body of the proposal. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments; their availability may be mentioned in the proposal.

10. JOINT PROPOSALS

a. Some projects involve joint efforts among individuals in different organizations or mutual efforts of more than one organization. Where multiple organizations are involved, the proposal may be submitted by only one of them. In this event, it should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, the proposal should describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. However, the proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which purport to specify the internal arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

11. LATE PROPOSALS

A proposal or modification thereto received after the date or dates specified in an NRA may still be considered if the selecting official deems it to offer NASA a significant technical advantage or cost reduction.

12. WITHDRAWAL

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

13. EVALUATION FACTORS

a. Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration

of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

2) The offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

3) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel who are critical in achieving the proposal objectives.

4) Overall standing among similar proposals available for evaluation and/or evaluation against the known state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the consideration of the realism and reasonableness of the proposed cost and the relationship of the proposed cost to available funds.

14. EVALUATION TECHNIQUES

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases, however, proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house where NASA has particular competence; others are evaluated by a combination of in-house people and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail or through assembled panels. Regardless of the technique, the final decisions are always made by a designated NASA selecting official. A proposal which is scientifically and programmatically meritorious, but which is not selected for award during its initial review under the NRA may be included in subsequent reviews unless the proposer requests otherwise.

15. SELECTION FOR AWARD

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held over for subsequent reviews, the proposer will be notified that the proposal was not selected for award. NASA will notify the proposer and explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation with the submitter. Formal RFPs are not used to obtain additional information on a proposal selected under the NRA process. However, the contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

16. CANCELLATION OF NRA

NASA reserves the right to make no awards under this NRA and, in the absence of program funding or for any other reason, to cancel this NRA by having a notice published in the Commerce Business Daily. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

CERTIFICATION REGARDING
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS
PRIMARY COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 28, 1988 Federal Register (pages 19160–19211). Copies of the regulations may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, D.C. 20202-4725, telephone (202) 732-2505.

A. The applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph A.(b) of this certification;

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

C. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lowered Tier Covered Transactions (Subgrants or Subcontracts)

(a) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principles is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department of agency.

(b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name | NRA or AO Number and Title

Printed Name and Title of Authorized Representative

Signature | Date

Printed Principal Investigator Name | Proposal Title

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85. Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government-wide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

I. GRANTEES OTHER THAN INDIVIDUALS

A. The grantee certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about --

(1) The dangers of drug abuse in the workplace;

(2) The grantees policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will

(1) Abide by the terms of the statement; and

(2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d) (2), with respect to any employee who is so convicted --

(1) Taking appropriate personnel action against such an employee, up to and including termination; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or Local health, Law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f)

B. The grantee shall insert in the space provided below the site(s) for the performance or work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

_____

_____

_____

_____

Check _____ if there are workplaces on file that are not identified here.

II. GRANTEES WHO ARE INDIVIDUALS

The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with the grant.

Organization Name | NRA or AO Number and Title

Printed Name and Title of Authorized Representative

Signature | Date

Printed Principal Investigator Name | Proposal Title

CERTIFICATION REGARDING LOBBYING

As required by S 1352 Title 31 of the U.S. Code for persons entering into a grant or cooperative agreement over $100,000, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, in connection with making of any Federal grant, the entering into of any cooperative, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting an officer or employee of any agency, Member of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts), and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by S1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Organization Name | NRA or AO Number and Title

Printed Name and Title of Authorized Representative

Signature | Date

Printed Principal Investigator Name | Proposal Title

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please *add* my name to the mailing list.
- ☐ 2. Please *remove* my name from the mailing list (please attach mailing label)
- ☐ 3. Please *update* my current listing.

CONTACT INFORMATION If your address has changed or your mailing label is incorrect, please provide *COMPLETE* contact information.

Code Number: (obtain from mailing label) | Salutation: (Mr.,Mrs.,Ms.,Dr.,Prof.,etc.) | Suffix (Ret.,PhD.,Jr.,III,etc.)

First Name: | MI: | Last Name:

Organization:

Division / Department:

Street:

City: | State: | Zip:

Telephone No: | Fax No:

E-Mail Address: _____ Internet Address: _____

Country: (foreign addresses, please specify)

Institution Type

(check only those that apply)

- ☐ 1. College or University
- ☐ 2. Minority College or University
- ☐ 3. Foreign Addressee
- ☐ 4. Minority Business
- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:

(check only those that apply)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

SPI
7/94

NASA
OFFICIAL MAILING LIST
UPDATE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
OFFICE OF SPACE SCIENCES
MAIL CODE SP1
WASHINGTON, DC 20546-0001

PLACE STAMP
HERE
POST OFFICE
WILL NOT
DELIVER
WITHOUT PROPER
POSTAGE

Please Tape (Do not staple)

National Aeronautics and
Space Administration
Code SPI
Washington, DC 20546-0001

Official Business
Penalty for Private Use, $300

END

DATE FILMED

08/08/95